

**HERCULES**



8EHQ-96-13600  
SP001 04/01/96

8EHQ-0496-13600

Hercules Incorporated  
Hercules Plaza  
1313 North Market Street  
Wilmington, DE 19894-0001  
(302) 594-5000

**ORIGINAL**

March 26, 1996

**RETURN RECEIPT REQUESTED**

TSCA Document Processing Center (TS-790)  
Office of Toxic Substances  
U.S. Environmental Protection Agency  
401 M Street, SW  
Washington, DC 20460

88-960000080

Followup

96 APR -1 PM 2:39

**RE: Additional Information to 8(e) Submission dated March 5, 1996**

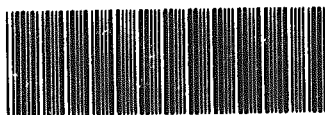
Attention: Section 8(e) Coordinator

This letter will provide additional information to the March 5, 1996 notice that Hercules Incorporated submitted under TSCA Section 8(e) (copy of cover letter attached). In that letter Hercules described the material tested as "low molecular weight polystyrene".

Recognizing that this term is relative, and that there may be a difference between the subject material of this notice and what the plastics industry views as low molecular weight polystyrene, we hereby submit molecular weight and physical property information to more accurately describe the substance which was the subject of that March 5, 1996 8(e) notice.

This low molecular weight polystyrene is typically composed of oligomeric material with > 70 wt. % being dimers, trimers and tetramers ( $n = 2 - 4$ ). Pentamers and higher make up the remaining < 30%. Number average molecular weight,  $M_n$ , is typically 300 - 400. Weight average molecular weight,  $M_w$ , is typically 400 - 500. Monomeric styrene is < 300 ppm. At room temperature, the material is a viscous liquid or soft solid. Softening point is typically less than 20°C.

I trust this provides adequate information to help distinguish these oligomeric materials from those which the plastics industry commonly call "low molecular weight" polystyrenes.



89960000063

Sincerely,

Gary L. McCallister  
Corporate Manager  
Regulatory Affairs and Toxicology

96 APR 11 AM 8:21

RECEIVED  
OPI NCIC

GLM:cj  
Attachment  
96mar11r.15

**Contains No CBI**

CC: H. Patrick Toner - Society of the Plastics Industry

# **HERCULES**

## **REGULATORY AFFAIRS**

LB  
Hercules Incorporated  
Hercules Plaza  
1313 North Market Street  
Wilmington, DE 19894-0001  
(302) 594-5000

March 5, 1996

### **RETURN RECEIPT REQUESTED**

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Office of Toxic Substances  
U.S. Environmental Protection Agency  
401 M Street, SW  
Washington, DC 20460

Attention: Section 8(e) Coordinator

Dear Sir or Madam:

This information is submitted under the provisions of the Toxic Substances Control Act, 90 Stat. 2029, 15 USC 2607, Section 8(e). Attached are summary tables of a report currently being drafted which reflect low-level estrogenicity of low molecular weight polystyrene (LPS), CASRN 9003-53-6, a homopolymer of styrene. These data were provided by the performing laboratory, TNO, Zeist, The Netherlands, to Hercules regulatory office in Rijswijk, The Netherlands, on February 16, 1996, and forwarded to our Wilmington office on that date.

The data provided (see attachments) constitute summary tables and statistical analysis of uterine weights and body weights following dietary administration of LPS. The increase in the relative weight of the uterus of the immature rat is one of several possible tests for estrogenic effects. Data were collected following four days feeding of diets containing test material to groups of immature female Wistar rats. Dietary concentrations from 1 to 1,000 ppm were used in a range-finding study in parallel with untreated feed (negative control) and diethylstilbestrol (DES; positive control). In the definitive study, dietary concentrations of 0, 10, 20, 40, 80, and 160 ppm of LPS were used and concentrations of 5, 10, and 20 ppb of DES.

The results show a dose-response relationship between dietary LPS concentration and the uterus weight/body weight ratio. The increase was statistically significant at 160 ppm LPS. The 80 ppm dosage level was a No-Effect Level (NOEL). The NOEL for the DES positive control was less than the minimum concentration used, 5 ppb, since that dosage gave a statistically significant uterine weight increase. The data indicate that the estrogenic activity of LPS is less than 1/20,000 of that of DES.

The full report of the estrogenicity study will be provided to EPA on receipt by this office.

Sincerely,



Gary L. McCallister  
Corporate Manager  
Regulatory Affairs

GLM/elm  
Attachments  
96-10.doc

Best Available Copy